

In the claims:

*Sub C1* 1. (Amended) A method of determining the occurrence of target gene silencing in a plant, which method comprises the steps of:

*B2* (i) obtaining a sample of material from said plant,  
(ii) producing a nucleic acid extract from said sample,  
(iii) analyzing said extract such as to determine the presence or absence of short RNA molecules which are 21- 25 nucleotides in length (SRMs) in said nucleic extract, (iv) correlating the presence of said SRMs in the extract with the occurrence of said target gene silencing in said plant.

8. (Amended) A method of detecting the silencing of a target gene in plant as determined in claim 1, which method further comprises the steps of:

(v) characterizing any SRMs which are present in said extract such as to determine sequence identity or similarity with said target gene, and

*B3* (vi) correlating the presence of SRMs in said extract which share sequence identity or similarity with said target gene with the silencing of said target gene in said plant.

*Sub C2* 9. (Amended) A method in accordance with claim 8, wherein the silencing of said target gene in the plant is associated with pathogen derived resistance.

10. A method in accordance with claim 8 wherein the silencing of said target gene in the plant is associated with modification of a specific trait by co-suppression of the target gene.

11. (Amended) A method of identifying a silenced target gene in a plant in which gene silencing is detected as claimed in claim 8, which method further comprises the steps of:

(vii) preparing a library of genes from said organism, and

(viii) identifying those genes in said library which share sequence identity or similarity with any SRMs which are present in the extract as being genes which are silenced in the organism.

14. (Amended) A process according to claim 13 which further comprises the step of transferring the RNA molecules on the gel to a hybridization membrane by electrophoresis.

17. (Amended) A process for isolating a silencing agent comprising SRMs for a target gene, which process comprises the steps of:

(i) silencing said target gene in said plant,  
(ii) obtaining a sample of material from said plant,  
(iii) performing a process in accordance with claim 16 to isolate said SRMs.

21. (Amended. A method according to claim 1 wherein the target gene is a plant gene selected from the group consisting of: a ripening specific gene; a gene involved in pollen formation; a gene involved in lignin biosynthesis; a gene involved in flower pigment production; a gene involved in regulatory pathways controlling development or environmental responses; a gene involved in the production of toxic secondary metabolites.

26. (Amended) A DNA construct in which a promoter is

operably linked to DNA for transcription in a host cell to generate a silencing agent for a target gene, said construct encoding a molecule selected from either:

- B<sup>2</sup>
- (i) one or more SRMs, or
  - (ii) an anti-sense RNA molecule capable of targeting a region of said target gene selected in accordance with the method of claim 1.

Please add the following new claims:

B<sup>8</sup>

33. A method as claimed in claim 1, wherein said short RNA molecules are between 23 and 25 nucleotides in length.

34. A method as claimed in claim 1, wherein said short RNA molecules are 25 nucleotides in length.

Please cancel claims 2, 3, 4, 18-20, 22-25, 30-31.

#### REMARKS

The January 19, 2001 Official Action and the references cited therein have been carefully reviewed. In view of the amendments presented herewith and the following remarks, favorable reconsideration and allowance of this application are respectfully requested.

It is noted at the outset that the requirement for restriction set forth by the Examiner in Paper No. 6 has been maintained and made final. Applicants reserve the right to file one or more continuing applications, as provided under 35 U.S.C. §120, on the subject matter of the non-elected claims.

The Examiner has objected to claims 14, 26 and 21 for containing minor informalities. These informalities have been